

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
14 April 2005 (14.04.2005)

PCT

(10) International Publication Number  
**WO 2005/034277 A1**

(51) International Patent Classification<sup>7</sup>: **H01M 008/12** (74) Agents: LAPOINTE, Gregory, P. et al.; 900 Chapel Street, Suite 1201, New Haven, CT 06510-2802 (US).

(21) International Application Number:  
**PCT/US2004/032038**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:  
29 September 2004 (29.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/506,936 29 September 2003 (29.09.2003) US

(71) Applicant (for all designated States except US): UTC FUEL CELLS, LLC [US/US]; 195 Governor's Highway, South Windsor, CT 06074 (US).

(72) Inventors; and

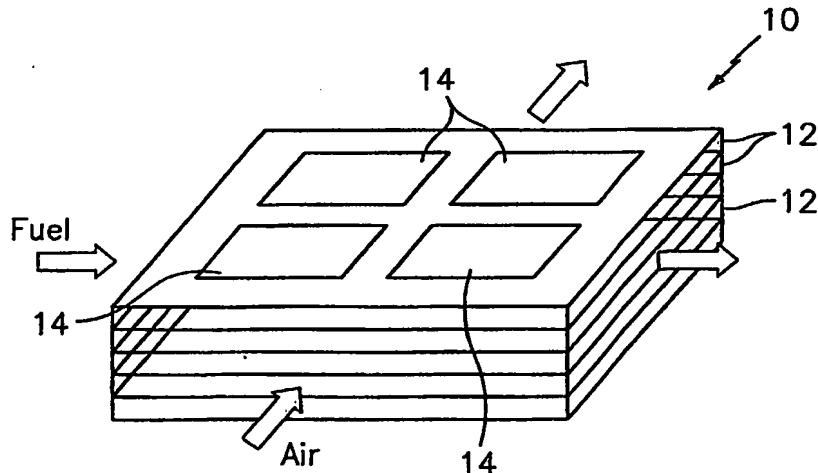
(75) Inventors/Applicants (for US only): WARRIER, Sunil, G. [US/US]; 95 Greenview Terrace, Middletown, CT 06457 (US). YAMANIS, Jean [US/US]; 17 Pasture Lane, Glastonbury, CT 06073 (US). MAUS, James, R. [US/US]; Old Saybrook, CT (US). OLSOMMER, Benoit [US/US]; South Glastonbury, CT (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:  
— with international search report

[Continued on next page]

(54) Title: COMPLIANT STACK FOR A PLANAR SOLID OXIDE FUEL CELL



WO 2005/034277 A1

(57) Abstract: A fuel cell stack (10) formed of repeating cell units (12) is provided wherein each cell unit (12) includes a fuel cell having an anode side (20) and a cathode side; an anode side frame (18); a cathode side frame (28); a bipolar plate (24) having an anode side interconnect adjacent to the anode side frame (28) and a cathode side interconnect adjacent to a cathode side frame (28) of an adjacent cell unit; a cathode side seal (26) between the fuel cell and the cathode side frame; and an anode side seal (22) between the fuel cell and the anode side frame, wherein at least one of the anode side interconnect, cathode side interconnect, anode side seal (22) and cathode side seal (26) are compliant.



- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*